

## ABSTRACT

The invention relates to an apparatus and a method for photo-electric measurement. The apparatus comprises a single or a plurality of photo-electric conversion devices, preferably array sensor(s) such as CCD, CMOS, CID and the like, an optical system which is modularly expandable in one axis or a plurality of axes in order to acquire electromagnetic radiation from a line or area of any desired size on an object, with any desired resolution, wherein the said optical system preferably separates the said electromagnetic radiation modularly into a plurality of smaller segments, and projects electromagnetic radiation corresponding to the said smaller segments onto said single or a plurality of individual photo-electric conversion devices and sensor electronics related to said photo-electric conversion device(s) which enable the operating mode and functionality of said photo-electric conversion device(s) to be defined and changed in real-time, whereby functions such as the readout sequence of pixels and unlimited flexibility of pixel binning in two dimensions are fully programmable, and said photo-electric conversion device(s) may operate and/or be controlled independently and/or simultaneously.